Beyond Experience and Capital, Is there a Return to Return Migration ?

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Abstract

This paper explores the effect of return migration on the performance of Egyptian household firms. A growing body of evidence suggests that return migrants are more likely to become and remain entrepreneurs (Marchetta, 2012; Wahba and Zenou, 2012). The length of the migration spell, the experience and the capital accumulated overseas may influence the ability of return migrants to establish and successfully manage their firms. We expand this literature by examining the impact of return migrants on the revenue of the business units they manage. We control for several layers of selection bias, from the migration decision to the pursuit of entrepreneurial activities. Our findings suggest that two determinants of firms' revenues favour return migrants: larger starting capital and the experience accumulated abroad.

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1 Introduction

Anecdotal evidences of successful firms started by return migrants abounds: from Robin Li the founder of Baidu in China, to Kumal Bahl in India or Hisham Haddara in Egypt[1]. However no systematic evidences exist that firms founded by return migrants out perform their counterparts founded by stayers. This paper intends to fill this gap.

In recent return migration models (Dustmann et al., 2011; Djajić and Vinogradova, 2015) return migration is included in the broader framework of expected revenue maximisation over the individual's life cycle. The possibility of return is considered by the migrant along with the decision to migrate. The decision whether to return depends on sufficient capital and/or knowledge accumulation abroad which enables the migrant to engage in an activity that they positively value at home.

The contribution of this paper is to assess the impact of return migration on entrepreneurial activities. For the first time, to the best of our knowledge, we are able to examine whether return migrants run businesses are more successful than those started by non-migrants.[2] Using data from the third wave of the Egypt Labour Market Survey (ELMPS 2012) on household firms and return migration, we analyse whether human and physical capital accumulated abroad by return migrants influence the performance, measured by net earnings, of businesses in the home country. Although previous studies have examined the propensity of return migrant to start new businesses (Marchetta, 2012; Wahba and Zenou, 2012) they are not able to observe and analyse the performance of the businesses started by entrepreneurs.

According to Reinhold and Thom (2013) and Barrett and Goggin (2010), for those return migrants that engage in waged work in the country of origin, the experience accumulated abroad and in particular the experience accumulated within the same sector of activity as their current employment, translates into a wage premium for them (on average 2.2% for the Mexican returnees in Reinhold and Thom (2013) and 7% for the Irish returnees in Barrett and Goggin (2010)). Likewise, better access to capital and experience gained abroad also impact the occupational choice of the migrants once they are back home. Most importantly for this paper, returnees tend to be keener

[1] See https://www.theguardian.com/technology/2005/dec/08/piracy.newshttps://www.theguardian.com/technology/2005/dec/08/p https://timesofindia.indiatimes.com/11poster-boys-of-indian-startup-industry/11-poster-boys-of-indian-startup-industry/photostory/52624470.cmshttps://www.si-ware.com/staff/hisham-haddara-ph-d/

[2] Reinhold and Thom (2013) in the case of Mexico check the robustness of their result regarding the positive impact of experience acquire abroad to the inclusion of the population of return migrants self employed and return migrants entrepreneurs. However their result is based on a comparison between the incomes of these two groups with the average income of the entire non-returnees population

to start a new business (Vreyer et al., 2010; Black and Castaldo, 2009; Wahba and Zenou, 2012). In addition, Marchetta (2012) finds that experience and the financial savings accumulated while abroad are the main reasons for return migrants to become and to remain entrepreneurs.[3]

At the sectoral level there is no consensus whether return migration has a positive impact on the performance of firms. Saxenian (2002) studies the information technology sector in Taiwan, China and India. She shows that in 1999 40% of the companies located in Hsinchu Science Park in Taiwan were started by returnees from the United States. Also in the high technology sector, Wei et al. (2017) show that Chinese returnees contribute to an increase of the efficiency of the firms they work for when a large technology gap exists between these firms and the most capital intensive firms in the industry. In a qualitative study, Ayman (2004) illustrates 34 cases of internal and/or international migration in Egypt. Of particular relevance are the cases of Ahmed Abdelaleem, an aluminum manufacturer, and Mahmoud el Sellini, an ironer who both became successful entrepreneurs after they returned to Egypt. Ahmed Adbelaleem left Egypt for Jordan where he worked in an Aluminum factory. After his return, he established an aluminum workshop in Cairo and expanded later his activities to aluminum production. Mahmoud El Sellini was already an ironer when he left Egypt. On his 9 years of experience in Saudi Arabia, he commented that: "Beside saving a lot of money, I have benefited more out of learning the new techniques used in ironing like dry cleaning services." He set up a dry cleaning service business at his return that his eldest son has inherited.

In contrast, Sun (2013) shows that return migrants in the venture capital sector in China seem to perform less well than their local Chinese counterparts. The author considers the lack of an established network (particularly with government officials) as a possible explanation for the weaker performance of return migrants. Wahba and Zenou (2012) formalizes a similar hypothesis regarding the effect of social networks: the lack of which is a major disadvantage in terms of business opportunities for return migrants. However the impact of network is not clear cut. As suggested by Saxenian (2002), it is the network formed abroad by return migrants and their role as bridges between several communities which can be at the origin of their advantage over locals workers and entrepreneurs.

The lack of quantitative studies on the economic impact of return migrants, that this paper contributes is a result of two main obstacles. First, how to define success when the entrepreneurs can be at the head of very small economic units? As noted by Li and Rama (2015), small economic units

[3]Wahba and Zenou (2012) and Marchetta (2012) rely on reported employment status to explore the link between return migration and entrepreneurship in Egypt. While in this paper we use data on business units on the household level to measure entrepreneurial success.

in developing countries are often informal making them difficult to observe. Second, how to deal with the bias resulting from the self selection of return migrants into migration, the decision to return and entrepreneurship. There is a growing consensus in the literature for the need to address selection issues when assessing returns on migration experience (Wahba, 2015; Batista et al., 2014). Selection into migration and return may be based on observables like eduction, age, or gender (Chiquiar and Hanson, 2005; Ambrosini et al., 2015). But migrants may also have unobservable characteristics that lead them to self-select into migration and return like talent, ability and attitude to risk (Akee, 2010; de Coulon and Piracha, 2005). These characteristics are possibley correlated with the propensity to engage in entrepreneurial activities and the potential success of these activities. Failling to account for selection into migration and into retuns will lead to biased estimates of the return on the migration experience. Whether the selction bias is positive or negative seems to vary across countries of origin and/or destination and remain an empirical question. While certain studies find a positive selection (Chiquiar and Hanson, 2005; McKenzie et al., 2010; Akee, 2010) others document a negative selction particulary into return (Ramos, 1992; Batista et al., 2014; Wahba, 2015). We overcome these obstacles by basing our analysis on the latest ELMPS survey. The 2012 wave contains key indicators related to firms owned by households (henceafter household firms) that are not restricted by their size or their formal status. In particular, information about the monthly average net earnings of the firm allows us to overcome the issue related to performance measurement.[4] We deal with the selection bias issue by using an econometric framework similar to Wahba (2015) that accounts for 4 levels of selection; migration, return migration, labour market participation and entrepreneurship.

To briefly summarize our findings we show that not only does a larger capital and skills acquired abroad explain the entrepreneurial behaviour of return migrants (Marchetta, 2012; Black and Castaldo, 2009), they also contribute to an improved performance of the firms they own. Moreover we find that the benefits of capital, whether physical or human, accumulated abroad are not specific to certain economic activities or locations. Our results suggest that government support dedicated to return migrants should not be limited to a subset of the return migrant population selected on the basis of academic achievement or the sector of economic activity. For example return migrants in Egypt are more likely to locate their entrepreneurial activity in rural areas maintaining/developing economic activities in regions which have been proven difficult to alleviate from

[4]The exact formulation of the question reported in the questionnaire is: "What are the average net earnings of your enterprise per month during the past year?"

poverty in the past in the Middle East and North African countries (World Bank, 2014; Boutayeb and Helmert, 2011).

The paper proceeds as follows. In Section (2), we discuss the characteristics of the returnees and their firms. Section (3) presents our methodology. In Section (4), we present and discuss our findings. Section (5)concludes.

2 Return Migrants and Household Firms

2.1 Data sources

The ELMPS 2012 is the third wave of a survey carried out by the Economic Research Forum (ERF) and the Egypt's Central agency for Public Mobilization and Statistics (CAPMAS). Two previous waves of the ELMPS survey were carried out in 1998 and 2006. A national representative sample of 12,060 households was surveyed, among these 6,752 are from the 2006 sample (Assaad and Krafft, 2013).[5] All individuals aged 6 and above in a household are included resulting in an overall sample of 49,186 individuals. The ELMPS provides historic data on the characteristics of surveyed households and individuals, such as education, employment and migration history. The modules related to return migration, saving, and borrowing were introduced in the 2012 survey.

We explore the relationship between return migration and the performance of household firms using the modules on return migrants, current migration and household firms. The combination of these three modules provides a level of detailed information that was not available in previous waves of the survey. Each household is requested to provide the details of up to 4 household firms, including the ID code of all members of the household working for the firm, indicators of the starting and current capital, the sector of activity of the firm, the number of employees, an estimation of expenditures on fixed assets and material inputs, an estimation of the earnings of the firm, and an estimation of the revenue that the household extract from the firm. Each household is also requested to provide information on the members of the household who are, at the moment of the survey, living abroad. The questions relate to the relationship of the migrants to the household, their employment situation, earnings, and their remittances. The module on return migration allows us to identify return migrants, the household they belong to and a number of personal characteristics at the moment of the survey and when they were abroad. Return migrants were asked additional questions regarding the conditions of departure, their employment history,

[5]For a detailed presentation of the survey please refer to Assaad and Krafft (2013).

financial situation abroad, and their reasons for returning to Egypt.[6]

2.2 Return migrants

According to the ELMPS 2012 survey, 1,381 of the surveyed individuals are returnees (less than 3% of the total of 49,186 included in the survey). These returnees are associated with 1,339 households (11% of the total). Most of the returnees are male (97%) and over 21, the age of legal majority in Egypt at the time of the survey (7 individuals are return migrants and minors).[7] In the remainder of this paper we focus our analysis on the adult (over 21) male population.

Table 1 displays the characteristics of return migrants in comparison to non-migrants and current migrants. The return migrants are on average 4 years older than the average non-migrant and 9 years older than the average current migrant. Return migrants are also more likely, on average, to be married, to be the head of their household, in the labour force and to live in rural areas than the non-migrants. On average, returnees left Egypt at the age of 26 for a migration spell that lasted approximately 5 years while current migrants left the country at 28 years old, on average. It is worth noting that the distribution of the migration spell is skewed. Although 72% of the returnees stayed up to 5 years abroad, 26% had a migration spell of 1 year or less and 45% had a migration spell up to 2 years. Compared to the population of non migrants, returnees have similar education levels, with the exception of secondary education and university attainment where we find a significantly larger proportion of return migrants with a secondary education (40.1% compared to 35.65%) and a significantly lower proportion of return migrant with an university degree (16.55% compared to 22.33%). On the contrary, current migrants have achieved better levels of education compared to the returnees. We find a significantly smaller proportion of illiterate migrants or with an elementary school level (11.80% compared to 21.08% and 3.91% compared to 10.29%) and a higher proportion with secondary school and university level of education (51.57% compared to 40.1% and 23.01% compared to 16.55%).

[Table 1 about here]

[6] In total, 34 questions were asked to household members regarding non agricultural household firms in section 13 of the ELMPS survey; 47 questions were addressed to household members regarding the situation of the household members currently abroad in section 12, 30 questions were addressed specifically to return migrants in section 10.1. The questionnaires are available at: http://www.erfdataportal.com/index.php/catalog/45. The data are available on demand from the Economic Research Forum.

[7] The age of the majority in Egypt changed in 2015 from 21 to 18.
http://english.ahram.org.eg/NewsContent/1/64/120441/Egypt/Politics-/Egyptian-cabinet-approves-amendment-to-lower-age-o.aspx

Table 2 presents information on employment status. The majority of returnees, non-migrants and migrants are wage workers (respectively 64.62%, 71.04% and 95.95%), nonetheless the proportion of wage workers in the returnee population is significantly less than in the non-migrants and migrants population. Return migrants are more likely to be an employer or to be self-employed than non-migrants and migrants (respectively 18.52% 12.42% and 2.07% for the employer category and 12.15%, 9.92% and 1.14% for the self employed).[8]The ratio of the returnees population and non-migrants unemployed are similar (3.64% and 3.40%). The migrants are significantly less likely to be unemployed in comparison to returnees (0.8% compared to 3.64%), however it has to be noted that the distribution of migrants employment status might be particularly representative of the migration policy of the main countries of destination of Egyptian migrants. Migration in gulf countries in particular is conditional to the obtention of a employment contract before departure (sponsorship or *kafala* system (Zahra, 2015)).

[Table 2 about here]

In table 3 we summarize the results to the question of why return migrants made the decision to return to Egypt.[9] Most of them (60%) came back because of the economic and political situation in the country of migration, only 7.8% of return migrants reported that the main motive of their return was to set up a new business or to take over a family business or a family farm. Table 4 looks at the destination countries of Egyptian return migrants. The vast majority of the return migrants have returned from North African and Middle Eastern countries (96.41%), 86% came back from either Iraq, Saudi Arabia, Libya and Jordan.

[Tables 3 and 4 about here]

2.3 The characteristics of household firms

We identify a total of 1,976 household firms. We have been able to identify the return migration status of the main entrepreneur for 1,942 firms and we have a complete set of information for 1,879

[8]A Self-employed individual is the sole or joint owner of his production unit and does not employ others.

[9]The category economic hardship abroad in table 3 encompasses reasons such as sudden termination of contract by employer, poor working conditions, end of contract and the war in Iraq and Kuwait, the category economic opportunities at home encompasses reasons such as to take over a family business of a farm or to set up a new business, the category social problems abroad encompasses reasons such as health problems, accidents, to take care for family members, or to be too old to work, finally the category social opportunities at home encompasses reasons such as to get married or to study

firms. The average monthly net earnings in our sample is on average 966 USD.[10] Non farming entrepreneurial activities represent a substantial part (18%) of the occupations reported in the ELMPS survey.[11] To provide a perspective on the relevance of entrepreneurial activities, we compare firms' average monthly net earnings to the monthly wages earned by employees. Table 5 shows that the monthly average net earnings of firms is around five times larger than the average monthly wage (966USD compared to 195USD).This important gap seems to be driven by the most successful firms. We observe a widening of the difference between firms monthly average net earnings and monthly wages from the 10th to the 90th percentile (at the 10th percentile, monthly average net earnings are 1.2 times larger than monthly wages, 1.66 times at the 50th percentile and 4.99 times at the 90th percentile.

[Table 5 about here]

According to the literature, firms' performance has been linked to their location in urban or rural areas (Owoo and Naudé, 2016; Rijkers et al., 2010), size (Montenegro and Patrinos, 2014), age (Nichter and Goldmark, 2009), capital availability (Grimm et al., 2011), and skills of their labour force (Moretti, 2004). Table 6, shows that in our sample, 55% of firms are located in urban areas. A large majority of these, 87%, are totally owned by the household. In terms of size, 91% of firms have only one member of the household working for the firm and 1 firm employs a maximum of five members of a household. Only 4% of the firms hire workers outside of the household. The largest firms in these terms employ 30 workers. Firms in our sample are on average 13 to 14 years old.

In Table 6, we also compare household firms managed by a returnee with household firms managed by a non-migrant. The two group of firms show significant differences. Regarding the variable that we consider as the best measure of the success of a household firm, the firms managed by non-migrants generate on average higher monthly earnings (1,023 USD compared to 570 USD). Whereas return migrants' firms are mostly located in rural areas (60%), non-migrant's firms are more often located in urban area (58%). The two groups of firms are active in similar economic sectors, retail trade, land transport and construction activities. However there are relatively more firms without returnees in the retail trade sector (40.6% compared to 34.3%), and more firms with returnees in the land transport sector (19.2% compared to 11.4%) or the construction sector (9.6% compared to 5.7%)

[10] In the few instances (1% of the firms) where there are several household members working for the firm, we consider the most senior respondent as the main entrepreneur.

[11] A total of 2,683 individuals over 10,992 in the labour force declare themselves to be employed or self employed. Among them 707 have an entrepreneurial activities linked to agricultural projects.

There is no significant difference in terms of the age of the firm, structure of ownerships or size of the firms in terms of number of workers between the two groups. Furthermore the average number of hired workers and workers from the same households tends to be similar.

[Table 6 about here]

Household members knowledgeable about the firms activity were asked to estimate the starting and current capital of the firm on an ordinal scale with 7 categories. Table 7 and Table 8 compare firms with and without returnees in terms of capital. For each category, Tables 7 and 8 list the share of firms with a capital value corresponding to this category. There is no significant differences of starting capital (current capital) between the firms managed by returnees and non-returnees at the exception for the group of firms with a starting capital (current capital) in the category between 10000 and 49000 EL (USD1652-USD8264). A larger proportion of firms managed by returnees (23.20% in comparison to 14.52%) start their existence with this relatively high amount of capital. Table 7 tends to suggest that returnees bring financial capital that they inject into household firms. However, it is important to note that not all the returnees had definitively returned when their firms started their activities (139 return migrants out of 297 (46.8%)). These returnees might have injected the capital they had saved at this particular moment of their migration and managed the firm remotely with the support of family and friends. Nonetheless, in 27 cases we can disregard this possibility as in 23 cases (7.7%), the establishment of the firm predates the return of the migrant but also predates the first migration of the returnee, in 5 cases (1.6%) the returnee answered to the question regarding his motive for returning in Egypt was to take over the family business and in 2 cases (0.6%) the returnee was taking over a family business founded before the date of departure of the first migration.[12]

[Tables 7 and 8 about here]

Firm performance has also been linked to the abilities and skills of the entrepreneurs (Mano et al., 2012; Nichter and Goldmark, 2009). Table 9 shows the different characteristics of return migrant and non-migrant entrepreneurs. Return migrant entrepreneurs are on average significantly older (44 years old compared to 40) and more likely to be married. They have a similar number of years of experience, in Egypt, in the field of activity of the firm before managing the firm

[12] We keep these observations as part of our sample in order to assess the impact of capital. As a robustnmess check, we eliminate these to further explore the potential relation between return migration, capital and the revenue of the firm.

(3.13 years compared to 3.59) but benefit, on average, from one additional year of experience in the same field acquired abroad. However it has to be noted that an important share of the entrepreneurs have no prior experience in the same field of activity of the firm they manage; only 30% of entrepreneurs, returnees or non-migrants, have acquired some experience in Egypt and only 16% of returnees have acquired some experience abroad in the same field of activity. When we consider only entrepreneurs with a non-null prior experience, all entrepreneurs have on average 12 years of experience acquired in Egypt and returnees have acquired, on average, 7 years of additional experience abroad.[13] Among return migrant entrepreneurs, 22.68% have another job compared to 17.45% of non-migrant entrepreneurs. Significant differences are observable in terms of education; relatively fewer return migrants belong to the group defined as illiterate (14.22% compared to 18.90%) and fewer return migrants have been to university (17.22% compared to 23.76%) however a relatively larger number of them has an education level corresponding to secondary school (40.00% compared to 29.20%).

[Table 9 about here]

3 Methodology

As highlighted in the introduction, the empirical assessment of the benefit of migration experience, whether in terms of wage premium or success of entrepreneurial activity, needs to deal with issues of selection bias; selection into migration, selection into return and selection into entrepreneurship. Migrants and return migrants are likely to have different abilities, attitudes to risk and entrepreneurial motivations compared to non-migrants. These unobservable characteristics will affect their choice of activity in general and their propensity to engage in entrepreneurial activities in particular. Moreover, unobserved characteristics of entrepreneurs will differ to those of non-entrepreneurs. These unobserved characteristics are likely to influence the success of entrepreneurial activity. So far very few empirical studies have controlled for these different layers of self-selection. Wahba (2015) estimate the wage premium of return migrants using a structural simultaneous model that allows for selection into migration, return, the labour force and waged work. Using data from the ELMPS 2006 wave for Egypt, Wahba (2015) finds evidence for negative selection of returnees among migrants and a positive selection of returnees into entrepreneurship. Batista et al. (2014) focus on

[13] Figures A1 and A2 in the Appendix show the distribution of years of experience in Egypt and Abroad among entrepreneurs

the link between return migration and entrepreneurship. They use data from Mozambique and rely on political events such as war in Mozambique and forced return migration to control for selection bias at the migration and return migration stages and provide evidence of negative selection at both of these stages. Both studies highlight the need to accurately control for self-selection when investigating returns on migration experience.

In this paper, we follow Wahba (2015) and estimate a structural simultaneous model of household firm revenues that accounts for the selection into migration, return migration, labour market participation and entrepreneurship.[14] More specifically we estimate the following model:

$$y_i = \gamma_1 Firm_i + \lambda_1 Entrepreneur_i + \alpha_1 Returnee_i + \mu_{1i}, \tag{1}$$

where, y is the average monthly net income of a firm managed by individual i, $Firm$ is a vector of firm level characteristics including the starting capital of the firm, the number of workers of firm i including members of the household, its age, a dummy indicating whether the ownership of the firm is shared or not, and a set of industry fixed effects.[15] $Entrepreneur$ is a vector of entrepreneur characteristics including the age, marital status, education attainment, a location dummy indicating whether the entrepreneur lives in an urban area or not, the experience of the entrepreneur and whether or not the entrepreneur has a second job. $Returnee$ is a dummy variable indicating whether the entrepreneur is a return migrant or not, and μ is the error term.

Firm revenues are only observed when individuals engage in an entrepreneurial activity and set-up a household firm. Entrepreneurship is only observed if individuals decide to engage in the labour market. Moreover, return migration is only observed if individuals decide previously to emigrate. We thus model these interrelated decisions; setting up a business and return migration and we condition entrepreneurship on labour market participation and return migration on emigration. The decision to become an entrepreneur is therefore estimated with the following equation:

$$E_i = \gamma_2 v_i + \lambda_2 Ind_i + \alpha_2 Returnee_i + \mu_{2i}, \tag{2}$$

where E is a dummy variable that take the value one if an individual owns a household firm and zero otherwise.[16] v is a vector of controls specific to the entrepreneurship equation. More precisely,

[14] Given that entrepreneurship and migration choices are predominately made by males, we limit our analysis to the male population aged 21 years or above. Our result are robust to the definition of the population as males aged 16 or above.

[15] Industry fixed effects are at the ISIC 1 level.

[16] Our definition of entrepreneurship is different to one adopted by Wahba (2015) and Marchetta (2012) where

as an exclusion restriction we use a dummy indicating whether the individual's father is/was an entrepreneur (Wahba, 2015). We also add a variable measuring the rate of entrepreneurship at the governorate level while distinguishing between urban and rural areas.[17] We use labour market data for the year 2010 provided by CAPMAS and measure the rate of entrepreneurship using the ratio of total entrepreneurs (the sum of employers and self-employed) over total employment in urban or rural areas of a governorate. Ind is a vector of individual level variables including the age, marital status, education attainment, a dummy for living in an urban area, and regional dummies at the governorate level. This vector is also used in the subsequent selection equations. μ_2 is an error term.

Labour market participation is estimated with the following equation:

$$P_i = \gamma_3 z_i + \lambda_3 Ind_i + \alpha_3 Returnee_i + \mu_{3i}, \tag{3}$$

where P is a dummy variable indicating whether an individual is engaged in the labour market or not. z is a vector of controls specific to the labour market participation equation; as an exclusion restriction we use the number of dependents measured as the number of household members that are under the age of 15 and those older than 65. We control for non-labour related income given by the sum of income from social assistance, returns on rent and interest on financial investments (Wahba, 2015). We also control for the unemployment rate at the governorate level.[18] μ_3 is an error term.

We model the decision of return migration with the following equation:

$$R_i = \gamma_4 x_i + \lambda_4 Ind_i + \mu_{4i}, \tag{4}$$

where R is a dummy variable indicating whether an individual is a return migrant or not. x is a vector of controls specific to the return migration equation; as an exclusion restriction we use economic shocks in the destination country in the period preceding the return (McKenzie et al., 2014; Wahba, 2015). More specifically, we use a dummy variable indicating whether the country of

entrepreneurship is linked to individuals that declare themselves to be an employer or self-employed. Our results are robust to the use of a broader definition of entrepreneurship similar to Wahba (2015).

[17] There are 29 governorates in Egypt and these correspond to first level administrative divisions.

[18] We exploit the richness of the labour market data provided by CAPMAS and calculate an unemployment rate specific to each education level. We also separate urban and rural areas within each governorate. For this variable and for the entrepreneurial rate variable, we limit our calculations to the male population.

destination experienced negative growth in the period before return migration.[19] We also control for Arab destination countries where most of the Egyptian emigration is temporary in nature (Wahba, 2015) and we add regional dummies and time dummies controlling for the decade of migration. μ_4 is an error term.

Finally, return migration is conditional on an initial decision to emigrate that we model with the following equation:

$$M_i = \gamma_5 Population\ Growth_i + \lambda_5 Ind_i + \mu_{5i}, \tag{5}$$

where M is a dummy indicating whether the individual is a current migrant or has migrated in the past. As an exclusion restriction we use the rate of population growth in the year of birth (Marchetta, 2012). μ_5 is an error term. This system of 5 equations is estimated simultaneously using a Conditional Mixed Process allowing all the errors to be correlated (Roodman, 2011).

4 Results

Table 10 reports the results. Column 1 presents the results for equation 1 where the dependent variable is firm revenues, column 2 presents the results for the entrepreneurial decision (equation 2) while column 3 presents the results for labour market participation (equation 3). Results for the decision of return migration (equation 4) are presented in column 4 and results for the decision to emigrate (equation 5) are presented in column 5.

Regarding the determinants of firm performance our results show that a higher level of education of the entrepreneur (Secondary school or University) is positively and significantly related to the performance of firms.[20] Migration experience per se does not seem to influence the performance of household firms as the coefficient on the Returnee dummy is positive but not statistically significant. We distinguish between the experience, within the same sector of activity, accumulated overseas and the experience accumulated in Egypt and find that both are positive and significant. However, the coefficient on the experience accumulated overseas is three times that of the experience gained in

[19] We use data from the World Bank to measure growth rates in destination countries. Given that on average, an Egyptian goes abroad for a 5 year migration spell we control for negative economic shocks in destination countries five years after the year of migration.

[20] The omitted category in terms of the educational level is illiterate

Egypt. This result supports our hypothesis that return migrants positively impact household firms through their experience gained abroad. The coefficient on the variable second job is negative and significant. The negative association between this variable and the performance of the firm indicates that when the entrepreneur has other employment activities they are unable or may not need to invest their time and effort in the household firm. The coefficient on the age of the entrepreneur is slightly negative and significant. The marital status or the localisation of the entrepreneur in urban region have no significant impact on the performance of household firms.

Concerning the firms characteristics, as expected we find that the starting capital is a significant determinant of the performance of the firm.[21] Household firms that were founded with a larger value of capital generate higher levels of earnings. The number of workers is also associated with a larger value of earnings. The age of the firm is also significant and positively correlated with the earnings of the firm. A shared ownership structure of the household firm influences significantly and positively its performance.

[Table 10 about here]

To illustrate our results, figure (1) shows the predicted increase in the monthly average net earning of firms based on the number of years of experience in the same sector of activities in Egypt or abroad. The accumulation of experience abroad has a stronger impact on the predicted average net revenue of the firm than accumulation of experience in Egypt. Moving from 5 to 10 years of experience abroad produces a USD68 increase of the average net revenue; this increase is only of USD18 for the same additional number of years of experience in Egypt. The average years of experience abroad for returnees (7 years) has a slightly larger impact on firm average revenue (USD371 compared to USD323) than the average number of year of experience in Egypt (11 years).

In the case of Egypt, most of the returnees have come back from Gulf countries which are wealthier and more advanced than their home country. Returnees might have been in contact with more modern techniques of production and management methods which they brought back to Egypt and applied successfully to their firms.

[Figure 1 about here]

[21] The omitted category is no capital.

Figure (2) shows the impact of a higher starting capital on firms monthly average net earnings. The impact of this variable might be only indirectly related to return migration, however we have seen that a significantly higher share of return migrant (23.20% compared to 14.52%) started their activity with a capital between El10000 and El49999 (USD1632-USD8264). When compared with firms starting their activities with a capital between El1000 and El4999 (USD163-USD826), the majority of the firms managed by a non-migrant (21.34%) or firms starting with a capital between El1 and El499 (USD0.16-USD82.6), the second largest group of firms managed by a non-migrant (17.90%), the difference in terms of average revenue is respectively USD122 and USD210.

[Figure 2 about here]

We now turn to the results of our selection equations. Our results in column (2) confirm the general finding in the literature that return migrants have a greater propensity of setting their own business. Individuals who's father is an entrepreneur and those located in governorate with a high rate of entrepreneurship also have a greater probability of setting their businesses. Column (3) shows that return migrants are more likely to participate into the labour market. As expected, the number of dependents increases the probability of joining the labour force while the availability of non-labour related extra income has a negative impact on labour market participation. Column (4) shows that among those who emigrate, individuals with an elementary school level of education are more likely to return than individuals who cannot read and write. Emigration to Arab countries is associated with a higher probability of return and negative economic shocks in the country of destination increase the probability of return.Finally, in column (5) we find that more educated, married individuals from rural areas are more prone to emigration. We also find that a higher rate of population growth in the year of birth increases the probability of emigration. Our results confirm Wahba (2015)'s finding of a negative selection of returnees among migrants (as indicated by the negative correlation between the error terms of equations 4 and 5) which suggests that unobservable characteristics that lead individuals to migrate reduce the likelihood of return. However, we do find a significant correlation between the error terms between the entrepreneurship euqation (Eq 3) and the return equation (Eq 4), or between the entrepreneurship euqation (Eq 3) and the migration equation (Eq 5). This indicates that unobservable characteristics that lead individuls to emigrate and those that lead individuals to retun do not necessearly lead them to become entrepreneurs.

Table (11) displays the results for equation 1 with a sequential introduction of our variables of

interest.[22] In column 1, we reproduce the results of our preferred specification for firms' revenue presented in table (10) with all the explanatory variables; in column 2, we discard all the variables at the firm level and the two variables measuring experience; in column 3, we reintegrate the firm level variables but not the experience related ones; in column 4, the 2 experience related variables are reintegrated without the firm level variables; and in column 5, all the variables are present at the exception of the variable measuring the starting capital. Interestingly the dummy variable, Returnee, indicating whether an individual is a return migrant or not is positive and significant except when we control for the starting capital related variables are missing (columns 2, 4 and 5). Even we control for the experience related variables (column 4) and firm level charateristics (column 5) the coefficient on the return dummy remains positive and significant. This result signals that a large part of the impact of return migration on firm revenue takes effect through the level of the starting capital.

To further explore a possible connection between starting capital, return migration and firm net earning, we re-run our main specification eliminating the 27 observations linked to the return migrant entrepreneurs whose firms were founded before their departure and/or who have returned to take over the family business and found similar results.

We also verify if our results might be driven by the aftermath of the 2011 Egyptian revolution as the data have been collected from March to June 2012 (Assaad and Krafft, 2013). In this particular period, Egypt was ruled by the Supreme Council of the Armed Force which was organizing the presidential election at the time. As noted by Assaad and Krafft (2013), Egypt was already experiencing a severe economic downturn due to the financial crisis of 2008/9; this downturn was made worse by the political instability following the revolution. Our main concern over the revolution comes from the possibility that economic sectors may be impacted differently by the crisis. If return migrants entrepreneurs or domestic entrepreneurs who set their firm in 2011 chose their sector according to their perception of the impact of the crisis and these perceptions were different across the 2 groups our coefficients might be biased. We eliminate the observations related to the economic sectors that were most impacted by the economic crisis according to Hosny et al. (2014) and found similar results.[23]

Finally we drop the largest firms (belonging to the 99% percentile of the firms monthly net earning distribution) and the smallest firms (belonging to the 1% percentile of the firms monthly

[22] In the appendix the results for all the equations are presented in Tables B1, B2, B3, B4. Equations 1,2,3 and 4 remained unchanged

[23] Accommodation, travel agency, tour operator, food and beverage.

net earning distribution) to take in account for possible outliers and our results remain unchanged.[24]

[Table 11 about here]

5 Conclusion

Is the story of return migration a success? Evidence from studies on return migrants' wages once they return in their home countries tend to suggest "yes" (Barrett and Goggin, 2010; Reinhold and Thom, 2013). Our paper completes this picture by analyzing at the performance of firms started by return migrant in Egypt. Two main factors favor these firms: the experience acquired abroad by the return migrant seems to be more valuable than the experience acquired in the same sector in Egypt, and return migrant entrepreneurs tend to start their firm with a larger starting capital than their counterpart who stayed all their working life in Egypt.

Should governments increase the scope and the scale of programs supporting the creation of firms by return migrants? At first sight it looks an economic policy with positive outcomes: helping them as they are back with valuable skills and/or capital in order to strengthen the entrepreneurial activities in their home country. However, it is far to be evident that economic policies, for example focusing on easing material conditions of the returnees, would help the desired migrants or at the right moment. The decision to start and run a company for a migrant results from a series of choices. In particular, it seems quite important to identify the return migrants who have accumulated enough skills and/or capital to succeed after his return.

Supporting return migrant once they are back and have started their businesses in order to expand them might also be a possibility insuring that migrants return with the necessary amount of skills and capital. Nonetheless, why support firms which are already on the path of success? Non-migrants might benefit more from state funded programs improving their skills and alleviating financial constraints. Our results might suggest a way forward to support home grown and returnee entrepreneurs: shared ownership of a firm at the start of an entrepreneurial project generates a positive outcome on firms revenues. Schemes to spur contact between home grown entrepreneurs and potential return migrants might deliver several advantages: expanding the possibility of joint ventures between home grown and return migrant entrepreneurs, building up the skills of the entrepreneurial communities, improving local knowledge for return migrants and easing the financial constraints for non migrants.

[24] All robustness checks results are available upon request.

Tables and Figures

Table 1: Returnees, Migrants and Non Migrants Population Characteristics

Variable	Returnees	Non-migrants	t-Test	Current Migrants	t-Test
age	43	39	11.96***	34	17.71***
marital status (% of population)	91.72	72.98	18.03***	76.60	6.82***
in the labour force (% of population)	94.67	83.60	12.50***		
urban (% of population)	35.52	47.68	-4.61***	27.88	2.57**
head of household (% of population)	89.25	69.92	17.28***		
average age at departure	26			28	-5.76**
average migration spell	4.8				
education level (% of population)					
illiterate	21.08	21.24	0.11	11.80	4.35***
read and write	6.71	5.32	1.56	5.98	0.51
elementary school	10.29	10.78	-0.49	3.91	5.24***
middle school	5.24	5.73	-0.50	3.71	-1.37
secondary school	40.10	34.61	2.97**	51.57	-3.98***
university	16.55	22.28	-4.18***	23.01	-3.05***

Notes: Sampling weights include
The t-Tests compare the Returnees population to the Non-migrants population and the Returnees population to the migrant population
The urban dummy indicates for the Migrants population whether they were living in a urban area before departure
Source: Authors elaboration on ELMPS (2012)

Table 2: Returnees, Non-Migrants and Migrants Population Employment Status

	Returnees	Non-Migrants	t-Test	Migrants	t-Test
Wage worker	64.62	71.04	-3.96***	95.95	-18.30***
Employer	18.52	12.42	5.14***	2.07	11.07***
Self-employed	12.15	9.92	2.03**	1.14	10.21***
Unpaid worker	1.06	3.20	-5.71***	0	
Unemployed	3.64	3.40	0.32	0.8	3.76***

Notes: Sampling weights included
The t-Test compare the Returnees population to the Non-migrants population and the Returnees population to the migrant population
Source: Authors elaboration on ELMPS (2012)

Table 3: Motives of return

Motives of return (in (%) of the returnees population)	
Economic hardships abroad	61.83
Economic opportunities at home	7.82
Social problems at home or abroad	15.67
Social opportunities at home	14.67

Notes: Sampling weights included
Source: Authors elaboration on ELMPS (2012)

Table 4: Return migrants main destination countries

Main Countries of Destination ((%) of the returnees population)	
Iraq	27.6
Saudi Arabia	24.3
Libya	20.2
Jordan	14.3
Kuwait	4.2
United Arab Emirates	3.9
Lebanon	1.1
Qatar	1
Greece	0.3
Italy	0.2

Notes: Sampling weights included
Source: Authors elaboration on ELMPS (2012)

Table 5: Firms average monthly net earnings and Wages in USD

Variable	Firms Revenue	Wages
average	966	195
minimum	0	2
maximum	119008	5785
percentile		
10%	83	67
25%	149	103
50%	248	149
75%	579	215
90%	1653	331

Source: ELMPS (2012) Authors own calculation

Table 6: Household firms

Variable	All Firms	Firms with Returnees	Firms without Returnees	t-Test
firm population	1879	291	1588	
age of the firm	13	11	13	0.01
net monthly earning (USD)	954	570	1023	6.92***
urban (%)	55	40	58	15.59***
shared ownerships (%)	13.1	14.6	12.8	0.31
total workers	1.34	1.32	1.34	0.03
hired workers	0.23	0.24	0.23	0.03
number of household members working for the firms	1.11	1.08	1.11	2.19
Main sector of Economic Activities				
Retail trade, except of motor vehicles and motorcycles (47)	40.0	34.3	40.6	3.3**
Land transport and transport via pipelines (49)	12.1	19.2	11.4	5.20**
Specialized construction activities (43)	6.2	9.6	5.7	2.95*

Notes: Sampling weights included
Source: Authors elaboration on ELMPS (2012)

Table 7: Starting Capital of The household firms (% of the firms population)

Value in EL (USD)	Starting Capital		t-Test
	Firms with returnees	Firms without returnees	
None	6.56	9.27	2.38
1 - 499 (0.16 - 83)	15.00	17.90	1.21
500 - 999 (83 - 165)	11.4	12.89	0.41
1,000 - 4,999 (165 - 826)	21.28	21.34	0.00
5,000 - 9,999 (826 - 1652)	15.54	13.77	0.47
10,000 - 49,999 (1652 - 8264)	23.20	14.52	7.74***
50,000 or more (8264 or more)	8.68	8.51	0.01

Notes: Sampling weights included
Source: Authors elaboration on ELMPS (2012)

Table 8: Current Capital of The household firms (% of the firms population)

Value in EL (USD)	Current Capital		t-Test
	Firms with returnees	Firms without returnees	
None	5.07	6.93	1.44
1 - 499 (0.16 - 83)	10.82	13.22	1.23
500 - 999 (83 - 165)	6.94	9.57	2.33
1,000 - 4,999 (165 - 826)	17.50	19.67	0.55
5,000 - 9,999 (826 - 1652)	17.67	16.22	0.32
10,000 - 49,999 (1652 - 8264)	27.97	19.15	6.52**
50,000 or more (8264 or more)	15.44	13.75	0.44

Notes: Sampling weights included
Source: Authors elaboration on ELMPS (2012)

Table 9: Main entrepreneur in the household firms

Variable	Returnees	Non Returnees	t-Test
age	44	40	16.77***
marital status (% of population)	96.43	88.27	28.82***
second job (% of population)	22.68	17.45	2.52
cumulated experience in the sector / all entrepreneurs			
cumulated experience in the sector, in Egypt	3.13	3.59	1.00
cumulated experience in the sector, Abroad	1.11		
cumulated experience in the sector / entrepreneurs with a non null experience			
cumulated experience in the sector, in Egypt	11.44	11.83	-0.38
cumulated experience in the sector, Abroad	7.02		
education level (% of population)			
illiterate	14.22	18.90	3.41*
read and write	9.09	7.68	0.33
elementary school	13.07	14.02	0.14
middle school	6.31	6.41	0.00
secondary school	40.00	29.20	8.99***
university	17.22	23.76	5.19**

Notes: Sampling weights included
Source: Authors elaboration on ELMPS (2012)

Table 10: Return Migration and the Performance of Household Firms: Main Findings

	(1) Firm Revenue	(2) Entrepreneurship	(3) Labour Market Participation	(4) Return Migration	(5) Emigration
Individual Level Variables					
Age	-0.007*	0.004*	-0.04***	0.022	0.001
	(0.003)	(0.002)	(0.001)	(0.007)	(0.001)
Education:					
Read & Write	0.19	0.30***	-0.06	-0.29	0.25***
	(0.13)	(0.07)	(0.07)	(0.18)	(0.07)
Elementary School	0.02	0.23***	-0.01	0.59***	0.08
	(0.1)	(0.06)	(0.05)	(0.19)	(0.06)
Middle School	0.19	0.13*	-0.11	0.25	0.18**
	(0.12)	(0.07)	(0.07)	(0.20)	(0.07)
Secondary School	0.21**	-0.02	-0.17***	-0.16	0.45***
	(0.10)	(0.05)	(0.06)	(0.14)	(0.04)
University	0.37***	0.02	0.14**	-0.16	0.24***
	(0.11)	(0.05)	(0.07)	(0.14)	(0.05)
Returnee	0.55	0.47**	1.63***		
	(0.49)	(0.2)	(0.09)		
Married	-0.01	0.51***	1.03***	0.01	0.39***
	(0.12)	(0.06)	(0.06)	(0.15)	(0.04)
Urban	0.04	0.38***	0.12***	0.14	-0.25***
	(0.09)	(0.03)	(0.03)	(0.10)	(0.03)
Second Job	-0.25***				
	(0.08)				
Overseas Experience	0.03**				
	(0.01)				
Experience in Egypt	0.01***				
	(0.004)				
Firm Level Variables					
Starting Capital					
Between 1 - 499	-0.18				
	(0.12)				
Between 500 - 999	0.07				
	(0.13)				
Between 1,000 - 4,999	0.24**				
	(0.12)				
Between 5,000 - 9,999	0.62***				
	(0.12)				
Between 10,000 - 49,999	0.62***				
	(0.13)				
50,000 or more	1.02***				
	(0.15)				
Total Workers	0.11***				
	(0.02)				
Shared Ownership	0.20**				
	(0.09)				
Firm Age	0.01***				
	(0.003)				
Exclusion Restrictions and Controls					

Continued on Next Page

	(1) Firm Revenue	(2) Entrepreneurship	(3) Labour Market Participation	(4) Return Migration	(5) Emigration
Father Entrepreneur		0.28***			
		(0.03)			
Entrepreneurial Rate		1.2***			
		(0.29)			
Father's Education					
Reads & Writes		0.22***			
		(0.04)			
Less than Intermediate		0.12***			
		(0.05)			
Intermediate		0.13**			
		(0.06)			
Above Intermediate		0.07			
		(0.14)			
University		0.18**			
		(0.08)			
Post-Graduate		-1.3***			
		(0.35)			
Number of Dependents			0.01*		
			(0.01)		
Extra Income			-0.03***		
			(0.008)		
Unemployment Rate			0.07		
			(0.47)		
Negative Growth				0.45***	
				(0.12)	
Arab Country				0.77***	
				(0.23)	
Population Growth					1.03***
					(0.04)
Constant	7.48***	-2.42***	1.75***	-0.005	-4.004***
	(0.40)	(0.12)	(0.08)	(0.76)	(0.14)
Log Likelihood: -17619.759*** rho12: -0.18 (0.26) rho13: -1.21*** (0.10)					
rho14: -0.13 (0.11) rho15: -0.39* (0.24) rho23: 0.20 (0.20) rho24: -0.13 (0.13)					
rho25: 0.25 (0.21) rho34: 0.30* (0.16) rho35: -0.09 (0.11) rho45: -0.25** (0.12)					

Note: Standard erros in parentheses. *, ** and *** indicate significance at the 1%, 5% and 10% respectively. The omitted category in the "Education" variable is "Illiterate" and the omitted category in the "Starting Capital" variable is "No Capital". The migration equation (Eq 5) is based on the overall sample of adult male population in Egypt and overseas (14306 obs), the return migration (Eq 4) is based on the sample of returnees and current migrants (1957 observations), the labour market participation equation (Eq 3) is based on the sample of the adult mnale population in Egypt (13307), the entrepreneurship equation (Eq 2) is based on the adult male population in the labour force (11262) and the firm revenue equation (Eq 1) is based on the sample of household firms (1820). The terms rhoxy indicates the correlation between the error terms of equations x and y.

Table 11: Return Migration and the Performance of Household Firms: Additional Findings

	(1)	(2)	(3)	(4)	(5)
Individual Level Variables					
Age	-0.007*	-0.0006	-0.005	-0.001	-0.027***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.007)
Education:					
Read & Write	0.19	0.14	0.20	0.11	0.18
	(0.13)	(0.14)	(0.13)	(0.13)	(0.14)
Elementary School	0.02	0.16	0.003	0.17	0.17
	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Middle School	0.19	0.18	0.17	0.19	0.27**
	(0.12)	(0.13)	(0.12)	(0.13)	(0.13)
Secondary School	0.21**	0.26**	0.17*	0.30***	0.28***
	(0.10)	(0.11)	(0.10)	(0.10)	(0.10)
University	0.37***	0.50***	0.32***	0.53***	0.68***
	(0.11)	(0.10)	(0.11)	(0.10)	(0.11)
Returnee	0.55	0.96**	0.56	0.97**	1.33***
	(0.49)	(0.42)	(0.51)	(0.38)	(0.42)
Married	-0.01	0.02	-0.02	0.02	0.65***
	(0.12)	(0.12)	(0.11)	(0.13)	(0.16)
Urban	0.04	0.09	0.04	0.09	0.16
	(0.09)	(0.09)	(0.09)	(0.09)	(0.10)
Second Job	-0.25***	-0.36***	-0.28***	-0.34***	-0.26***
	(0.08)	(0.08)	(0.08)	(0.08)	(0.09)
Overseas Experience	0.03**			0.03***	0.04***
	(0.01)			(0.01)	(0.01)
Experience in Egypt	0.01***			0.01**	0.01***
	(0.004)			(0.004)	(0.003)
Firm Level Variables					
Starting Capital					
Between 1 - 499	-0.18		-0.17		
	(0.12)		(0.12)		
Between 500 - 999	0.07		0.09		
	(0.13)		(0.13)		
Between 1,000 - 4,999	0.24**		0.26**		
	(0.12)		(0.12)		
Between 5,000 - 9,999	0.62***		0.64***		
	(0.12)		(0.12)		
Between 10,000 - 49,999	0.62***		0.64***		
	(0.13)		(0.13)		
50,000 or more	1.02***		1.03***		
	(0.15)		(0.15)		
Total Workers	0.11***		0.11***		0.13***
	(0.02)		(0.02)		(0.02)
Shared Ownership	0.20**		0.19**		0.38***
	(0.09)		(0.09)		(0.09)
Firm Age	0.01***		0.01***		0.01***
	(0.003)		(0.003)		(0.003)

Note: Standard erros in parentheses. *, ** and *** indicate significance at the 1%, 5% and 10% respectively. The omitted category in the "Education" variable is "Illiterate" and the omitted category in the "Starting Capital" variable is "No Capital".

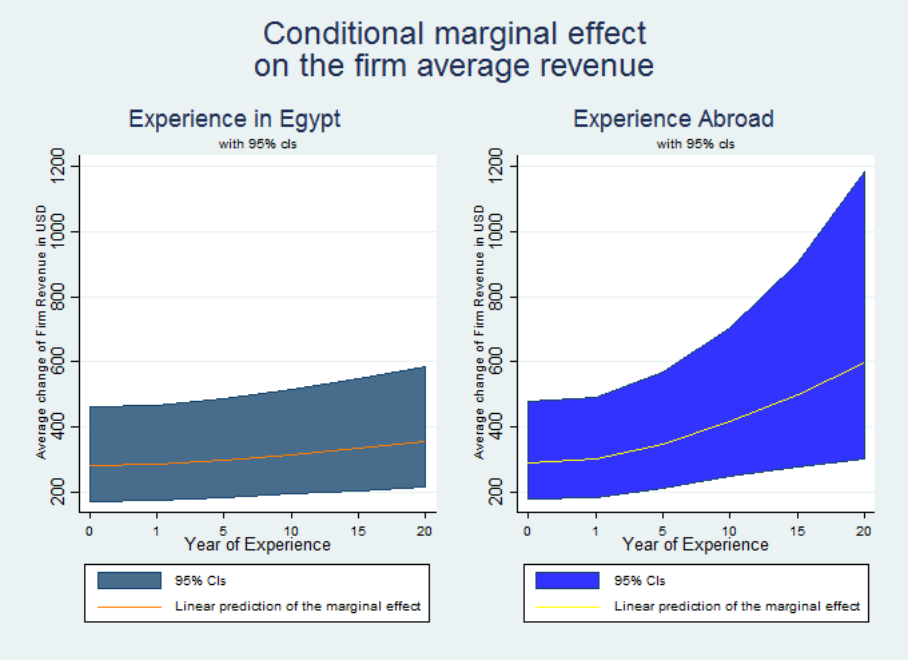

Figure 1: Marginal effect of experience on the firm average net revenue

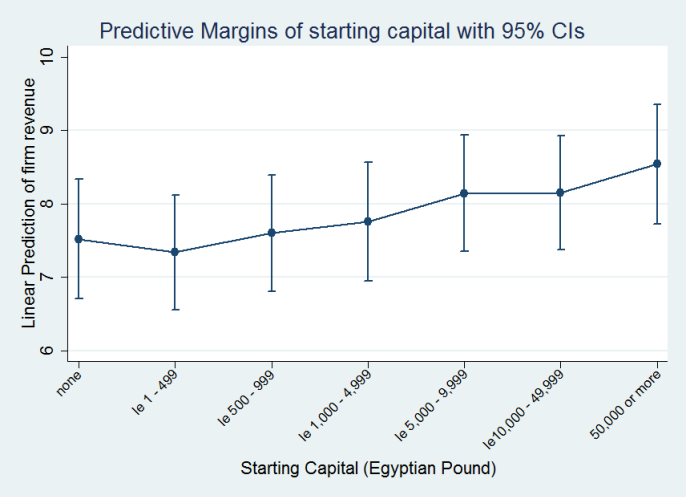

Figure 2: Marginal effect of starting capital on the firm average net revenue

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A Work Experience

Figure A1: Prior Work Experience Abroad in the same field of activity as the firm managed

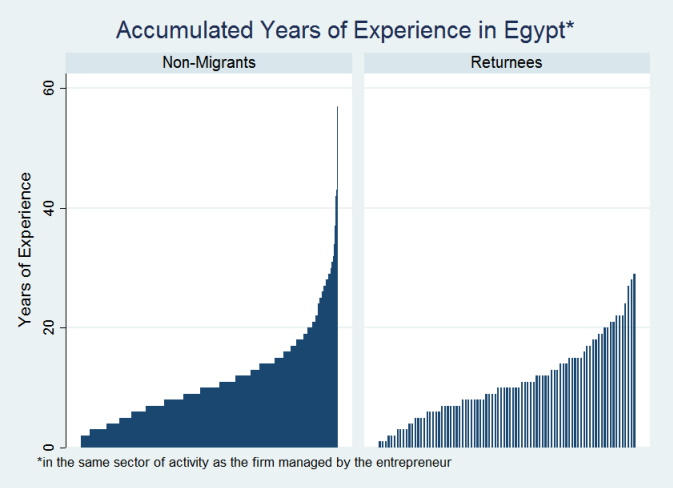

Figure A2: Prior Work Experience in Egypt in the same field of activity as the firm managed

B Additional Tables

Table B1: Full Results of Specification Exculding Experience and Firm Level Variables

	(1) Firm Revenue	(2) Entrepreneurship	(3) LPM	(4) Return Migration	(5) Emigration
Individual Level Variables					
Age	-0.0006	0.005**	-0.04***	0.002	0.0008
	(0.003)	(0.002)	(0.001)	(0.007)	(0.001)
Education:					
Read & Write	0.14	0.31***	-0.06	-0.29	0.25***
	(0.14)	(0.07)	(0.08)	(0.18)	(0.07)
Elementary School	0.16	0.24***	-0.02	0.58***	0.08
	(0.1)	(0.06)	(0.05)	(0.19)	(0.06)
Middle School	0.18	0.14*	-0.11	0.25	0.18**
	(0.13)	(0.07)	(0.08)	(0.21)	(0.07)
Secondary School	0.26**	-0.01	-0.17***	-0.16	0.44***
	(0.11)	(0.05)	(0.06)	(0.14)	(0.04)
University	0.50***	0.02	0.15**	-0.15	0.23***
	(0.10)	(0.05)	(0.07)	(0.14)	(0.04)
Returnee	0.96**	0.27	1.57***		
	(0.42)	(0.2)	(0.09)		
Married	0.02	0.50***	1.06***	0.01	0.39***
	(0.12)	(0.05)	(0.06)	(0.15)	(0.04)
Urban	0.09	0.37***	0.11***	0.14	-0.25***
	(0.09)	(0.03)	(0.03)	(0.10)	(0.03)
Second Job	-0.36***				
	(0.08)				
Exclusion Restrictions and Controls					
Father Entrepreneur		0.29***			
		(0.03)			
Entrepreneurial Rate		1.26***			
		(0.29)			
Father's Education					
Reads & Writes		0.22***			
		(0.04)			
Less than Intermediate		0.12**			
		(0.05)			
Intermediate		0.15**			
		(0.06)			
Above Intermediate		0.08			
		(0.14)			
University		0.20**			
		(0.09)			
Post-Graduate		-1.29***			
		(0.35)			
Number of Dependents			0.02*		
			(0.01)		
Extra Income			-0.03***		
			(0.008)		
Unemployment Rate			0.01		

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	(1) Firm Revenue	(2) Entrepreneurship	(3) LPM	(4) Return Migration	(5) Emigration
			(0.49)		
Negative Growth				0.45***	
				(0.12)	
Arab Country				0.78***	
				(0.23)	
Population Growth					1.03***
					(0.04)
Constant	7.64***	-2.45***	1.78***	-0.03	-3.98***
	(0.36)	(0.12)	(0.08)	(0.81)	(0.14)
Log Likelihood: -17619.759*** rho12: -0.18 (0.26) rho13: -1.09*** (0.10)					
rho14: -0.02 (0.10) rho15: -0.58*** (0.21) rho23: 0.21 (0.21) rho24: -0.14 (0.12)					
rho25: 0.27 (0.21) rho34: 0.23* (0.11) rho35: -0.000 (0.10) rho45: -0.29** (0.11)					

Note: Standard erros in parentheses. *, ** and *** indicate significance at the 1%, 5% and 10% respectively. The omitted category in the "Education" variable is "Illiterate" and the omitted category in the "Starting Capital" variable is "No Capital". The migration equation (Eq 5) is based on the overall sample of adult male population in Egypt and overseas (14306 obs), the return migration (Eq 4) is based on the sample of returnees and current migrants (1957 observations), the labour market participation equation (Eq 3) is based on the sample of the adult mnale population in Egypt (13307), the entrepreneurship equation (Eq 2) is based on the adult male population in the labour force (11262) and the firm revenue equation (Eq 1) is based on the sample of household firms (1820). The terms rhoxy indicates the correlation between the error terms of equations x and y.

Table B2: Full Results of Specification Exculding Experience Variables

	(1) Firm Revenue	(2) Entrepreneurship	(3) LPM	(4) Return Migration	(5) Emigration
Individual Level Variables					
Age	-0.005	0.004*	-0.04***	0.002	0.001
	(0.003)	(0.002)	(0.001)	(0.007)	(0.001)
Education:					
Read & Write	0.20	0.30***	-0.06	-0.29	0.25***
	(0.13)	(0.07)	(0.07)	(0.18)	(0.07)
Elementary School	0.003	0.23***	-0.01	0.58***	0.08
	(0.10)	(0.06)	(0.05)	(0.19)	(0.06)
Middle School	0.17	0.13*	-0.11	0.25	0.18**
	(0.12)	(0.07)	(0.07)	(0.20)	(0.07)
Secondary School	0.17*	-0.02	-0.17***	-0.16	0.45***
	(0.10)	(0.05)	(0.06)	(0.14)	(0.04)
University	0.32***	0.02	0.14**	-0.16	0.24***
	(0.11)	(0.05)	(0.07)	(0.14)	(0.05)
Returnee	0.56	0.47**	1.63***		
	(0.51)	(0.2)	(0.09)		
Married	-0.02	0.51***	1.03***	0.01	0.39***
	(0.11)	(0.06)	(0.06)	(0.15)	(0.04)
Urban	0.04	0.38***	0.12***	0.14	-0.26***
	(0.09)	(0.03)	(0.03)	(0.10)	(0.03)
Second Job	-0.28***				
	(0.08)				
Firm Level Variables					
Starting Capital					
Between 1 - 499	-0.17				
	(0.12)				
Between 500 - 999	0.09				
	(0.13)				
Between 1,000 - 4,999	0.26**				
	(0.12)				
Between 5,000 - 9,999	0.64***				
	(0.12)				
Between 10,000 - 49,999	0.64***				
	(0.13)				
50,000 or more	1.03***				
	(0.15)				
Total Workers	0.11***				
	(0.02)				
Shared Ownership	0.19**				
	(0.09)				
Firm Age	0.01***				
	(0.003)				
Exclusion Restrictions and Controls					
Father Entrepreneur		0.28***			
		(0.03)			
Entrepreneurial Rate		1.21***			
		(0.29)			

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	(1) Firm Revenue	(2) Entrepreneurship	(3) LPM	(4) Return Migration	(5) Emigration
Father's Education					
Reads & Writes		0.22***			
		(0.04)			
Less than Intermediate		0.12**			
		(0.05)			
Intermediate		0.13**			
		(0.06)			
Above Intermediate		0.07			
		(0.14)			
University		0.18**			
		(0.08)			
Post-Graduate		-1.3***			
		(0.35)			
Number of Dependents			0.01*		
			(0.01)		
Extra Income			-0.03***		
			(0.008)		
Unemployment Rate			0.07		
			(0.47)		
Negative Growth				0.45***	
				(0.12)	
Arab Country				0.77***	
				(0.23)	
Population Growth					1.03***
					(0.04)
Constant	7.54***	-2.42***	1.75***	-0.005	-4.003***
	(0.41)	(0.12)	(0.08)	(0.76)	(0.14)
Log Likelihood: -17625.714*** rho12: -0.18 (0.25) rho13: -1.21*** (0.10)					
rho14: -0.13 (0.11) rho15: -0.38 (0.25) rho23: 0.20 (0.20) rho24: -0.13 (0.13)					
rho25: 0.23 (0.20) rho34: 0.30* (0.16) rho35: -0.13 (0.12) rho45: -0.27** (0.13)					

Note: Standard erros in parentheses. *, ** and *** indicate significance at the 1%, 5% and 10% respectively. The omitted category in the "Education" variable is "Illiterate" and the omitted category in the "Starting Capital" variable is "No Capital". The migration equation (Eq 5) is based on the overall sample of adult male population in Egypt and overseas (14306 obs), the return migration (Eq 4) is based on the sample of returnees and current migrants (1957 observations), the labour market participation equation (Eq 3) is based on the sample of the adult mnale population in Egypt (13307), the entrepreneurship equation (Eq 2) is based on the adult male population in the labour force (11262) and the firm revenue equation (Eq 1) is based on the sample of household firms (1820). The terms rhoxy indicates the correlation between the error terms of equations x and y.

Table B3: Full Results of Specification Exculding Firm Level Variables

	(1) Firm Revenue	(2) Entrepreneurship	(3) LPM	(4) Return Migration	(5) Emigration
Individual Level Variables					
Age	-0.001	0.005***	-0.04***	0.002	0.0008
	(0.003)	(0.002)	(0.001)	(0.007)	(0.001)
Education:					
Read & Write	0.11	0.31***	-0.06	-0.28	0.25***
	(0.13)	(0.07)	(0.08)	(0.18)	(0.07)
Elementary School	0.17	0.24***	-0.02	0.58***	0.08
	(0.10)	(0.06)	(0.05)	(0.19)	(0.06)
Middle School	0.19	0.14*	-0.11	0.25	0.18**
	(0.13)	(0.07)	(0.08)	(0.20)	(0.07)
Secondary School	0.30***	-0.01	-0.17***	-0.15	0.43***
	(0.10)	(0.05)	(0.06)	(0.14)	(0.04)
University	0.53***	0.02	0.15**	-0.15	0.23***
	(0.10)	(0.05)	(0.07)	(0.14)	(0.05)
Returnee	0.97**	0.26	1.57***		
	(0.38)	(0.2)	(0.09)		
Married	0.02	0.50***	1.06***	0.01	0.39***
	(0.13)	(0.05)	(0.06)	(0.15)	(0.04)
Urban	0.09	0.37***	0.11***	0.14	-0.25***
	(0.09)	(0.03)	(0.03)	(0.10)	(0.03)
Second Job	-0.34***				
	(0.08)				
Overseas Experience	0.03***				
	(0.01)				
Experience in Egypt	0.01**				
	(0.004)				
Exclusion Restrictions and Controls					
Father Entrepreneur		0.29***			
		(0.03)			
Entrepreneurial Rate		1.2***			
		(0.28)			
Father's Education					
Reads & Writes		0.22***			
		(0.04)			
Less than Intermediate		0.12***			
		(0.05)			
Intermediate		0.15**			
		(0.06)			
Above Intermediate		0.08			
		(0.14)			
University		0.20**			
		(0.08)			
Post-Graduate		-1.29***			
		(0.35)			
Number of Dependents			0.02*		
			(0.01)		
Extra Income			-0.03***		

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	(1) Firm Revenue	(2) Entrepreneurship	(3) LPM	(4) Return Migration	(5) Emigration
			(0.008)		
Unemployment Rate			0.01		
			(0.49)		
Negative Growth				0.45***	
				(0.12)	
Arab Country				0.78***	
				(0.23)	
Population Growth					1.03***
					(0.04)
Constant	7.58***	-2.45***	1.75***	-0.005	-3.98***
	(0.37)	(0.12)	(0.08)	(0.76)	(0.14)
Log Likelihood: -17942.839*** rho12: -0.18 (0.29) rho13: -1.09*** (0.10)					
rho14: -0.01 (0.10) rho15: -0.61*** (0.19) rho23: 0.21 (0.20) rho24: -0.14 (0.12)					
rho25: 0.27 (0.21) rho34: 0.21* (0.11) rho35: 0.02 (0.11) rho45: -0.28** (0.11)					

Note: Standard erros in parentheses. *, ** and *** indicate significance at the 1%, 5% and 10% respectively. The omitted category in the "Education" variable is "Illiterate" and the omitted category in the "Starting Capital" variable is "No Capital". The migration equation (Eq 5) is based on the overall sample of adult male population in Egypt and overseas (14306 obs), the return migration (Eq 4) is based on the sample of returnees and current migrants (1957 observations), the labour market participation equation (Eq 3) is based on the sample of the adult mnale population in Egypt (13307), the entrepreneurship equation (Eq 2) is based on the adult male population in the labour force (11262) and the firm revenue equation (Eq 1) is based on the sample of household firms (1820). The terms rhoxy indicates the correlation between the error terms of equations x and y.

Table B4: Full Results of Specification Exculding Starting Capital Variables

	(1) Firm Revenue	(2) Entrepreneurship	(3) LPM	(4) Return Migration	(5) Emigration
Individual Level Variables					
Age	-0.027***	0.01***	-0.04***	0.002	0.001
	(0.007)	(0.002)	(0.001)	(0.007)	(0.001)
Education:					
Read & Write	0.18	0.31***	-0.05	-0.28	0.25***
	(0.14)	(0.07)	(0.07)	(0.18)	(0.07)
Elementary School	0.17	0.24***	-0.02	0.58***	0.08
	(0.10)	(0.06)	(0.05)	(0.19)	(0.06)
Middle School	0.27**	0.14*	-0.13	0.24	0.18**
	(0.13)	(0.07)	(0.07)	(0.20)	(0.07)
Secondary School	0.28***	-0.006	-0.19***	-0.16	0.44***
	(0.10)	(0.05)	(0.05)	(0.13)	(0.04)
University	0.68***	0.007	0.14**	-0.16	0.23***
	(0.11)	(0.05)	(0.06)	(0.14)	(0.05)
Returnee	1.33***	0.15	1.63***		
	(0.42)	(0.20)	(0.08)		
Married	0.65***	0.37***	0.99***	0.01	0.39***
	(0.16)	(0.07)	(0.06)	(0.15)	(0.04)
Urban	0.16	0.37***	0.13***	0.14	-0.25***
	(0.10)	(0.03)	(0.03)	(0.10)	(0.03)
Second Job	-0.26***				
	(0.09)				
Overseas Experience	0.04***				
	(0.01)				
Experience in Egypt	0.01**				
	(0.004)				
Firm Level Variables					
Total Workers	0.13***				
	(0.02)				
Shared Ownership	0.38***				
	(0.09)				
Firm Age	0.01***				
	(0.003)				
Exclusion Restrictions and Controls					
Father Entrepreneur		0.29***			
		(0.03)			
Entrepreneurial Rate		1.24***			
		(0.28)			
Father's Education					
Reads & Writes		0.23***			
		(0.04)			
Less than Intermediate		0.12**			
		(0.05)			
Intermediate		0.15**			
		(0.07)			
Above Intermediate		0.08			
		(0.14)			

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	(1) Firm Revenue	(2) Entrepreneurship	(3) LPM	(4) Return Migration	(5) Emigration
University		0.18**			
		(0.09)			
Post-Graduate		-1.3***			
		(0.35)			
Number of Dependents			0.02*		
			(0.01)		
Extra Income			-0.03***		
			(0.008)		
Unemployment Rate			0.03		
			(0.46)		
Negative Growth				0.46***	
				(0.11)	
Arab Country				0.77***	
				(0.24)	
Population Growth					1.03***
					(0.04)
Constant	7.49***	-2.45***	1.73***	-0.04	-4.003***
	(0.57)	(0.12)	(0.08)	(0.73)	(0.14)
Log Likelihood: -17768.725*** rho12: -0.16 (0.24) rho13: -1.24*** (0.10)					
rho14: 0.018 (0.09) rho15: -0.69*** (0.20) rho23: 0.20 (0.20) rho24: -0.10 (0.12)					
rho25: 0.21 (0.24) rho34: -0.07 (0.12) rho35: 0.98*** (0.21) rho45: -0.19 (0.17)					

Note: Standard erros in parentheses. *, ** and *** indicate significance at the 1%, 5% and 10% respectively. The omitted category in the "Education" variable is "Illiterate" and the omitted category in the "Starting Capital" variable is "No Capital". The migration equation (Eq 5) is based on the overall sample of adult male population in Egypt and overseas (14306 obs), the return migration (Eq 4) is based on the sample of returnees and current migrants (1957 observations), the labour market participation equation (Eq 3) is based on the sample of the adult mnale population in Egypt (13307), the entrepreneurship equation (Eq 2) is based on the adult male population in the labour force (11262) and the firm revenue equation (Eq 1) is based on the sample of household firms (1820). The terms rhoxy indicates the correlation between the error terms of equations x and y.